

C. Remarks

Originally filed claims 1-35 have been cancelled without prejudice or disclaimer, and new claims 36-51 have been added. Consideration of the newly added claims is respectfully requested.

The new claims are directed to embodiments of removing DNA from protein samples containing DNA/histone complexes. One embodiment involves controlling the concentration of salt in the loading or washing solutions used with metal chelate chromatography (IMAC); the other embodiment involves the use of alcohols in the washing solution used with hydrophobic interaction chromatography (HIC). The new claims as filed find support in the application as originally filed.

More specifically, Claim 36 is directed to a method of purifying target proteins using IMAC and is disclosed in the application, for example, at page 2, lines 24-28, page 9, line 19 - page 10, line 5, and in original claims 8, 9, and 12. Specifically, page 9, lines 34-35 of the application states that the novelty of this step is to load with 2M NaCl or to wash with 2M NaCl to remove the DNA from the DNA/histone complexes.

Claim 37 depends from claim 36 and is directed to a method for purifying a highly anionic target protein using IMAC. The application provides support for this claim, for example, at page 2, lines 24-28, page 4, lines 2-10, and page 9, line 19 - page 10, line 5. Claims 38 and 39 find support in the application, for example, at page 4, lines 2-10, and page 7, lines 4-5. Claims 40 and 41 find support in the application, for example, at page 9, lines 34-35.

Independent claim 42 recites that at least one of the loading step and the washing step uses a solution comprising an ionic strength of at least about 2M to remove DNA from the sample. It is supported by the well-known fact that the ionic strength of the disclosed salt solution (i.e., 2M NaCl) is 2M. The Applicants submit that a person of ordinary skill in the art would understand, based on the present disclosure, that any loading

or washing solution with an ionic strength of at least about 2M would be expected to increase the log₁₀ removal (or LRV) of DNA when the DNA is bound to histones.

Claim 43 depends from claim 42 and recites a highly anionic target protein to be purified. This claim finds support, for example, at page 4, lines 2-10. Claims 44 and 45 find support, for example, at page 4, lines 2-10, and page 7, lines 4-5.

Independent claim 46 is directed to the use of the alcohols ethanol or isopropanol in the wash step in HIC to remove DNA from protein samples containing DNA/histone complexes. Support for this claim can be found in the application, for example, at page 8, line 26 - page 9, line 16.

Claim 47 depends from claim 46 and recites a highly anionic target protein to be purified on a HIC column. This claim finds support, for example, at page 4, lines 2-10. Claims 48 and 49 find support, for example, at page 4, lines 2-10, and page 7, lines 4-5. Claims 50 and 51 find support, for example, at page 8, line 36 - page 9, line 5, and original claim 11.

Accordingly, Applicants respectfully submit that the newly added claims are not new matter.

The numbered paragraphs below correspond to the numbered paragraphs of the Office Action. The Applicants respectfully request reconsideration in light of the present amendments and remarks.

1. Claims 1-35, including rejected claims 1-3 and 19-25, have been cancelled. Applicants respectfully submit that new claims 36-51 meet the requirements of 35 U.S.C. § 101.

2. Claims 1-35, including rejected claims 1-2, 4-16, 18-20, 23, and 26-33, have been cancelled. Applicants respectfully submit that new claims 36-51 meet the requirements of 35 U.S.C. § 112, first paragraph.

3. Rejected claims 1-35 have been cancelled. Applicants respectfully submit that new claims 36-51 meet the requirements of 35 U.S.C. § 112, first paragraph.

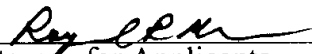
Specifically, referring to claims 37, 43, and 47, and all claims depending therefrom, the term “highly,” especially as clarified within the phrase “highly anionic,” is not indefinite to one of ordinary skill in the art. For example, the abstract states that highly anionic target proteins include sulfated proteins having five or more sulfations, and PSGL-1 is given as a specific example. Further support for the meaning of “highly anionic” is found at page 4, lines 2-4. In addition, Applicants submit that one of ordinary skill in the art would understand the meaning of the phrase “highly anionic” in reference to proteins regardless of the presence of such descriptions in the text of the application.

4-8. Claims 1-35, including rejected claims 1-9, 15-22, 26, 28, and 32-35, have been cancelled. Applicants respectfully submit that new claims 36-51 meet the requirements of 35 U.S.C. §§ 102 and 103. Specifically, none of the cited references in the Office Action refer to (1) the use of a solution comprising at least about 2M NaCl in the loading or washing steps of IMAC purifications; (2) the use of a solution comprising an ionic strength of at least about 2M in the loading or washing steps of IMAC purifications; or (3) the use of a solution comprising at least about 5% ethanol or 5% isopropanol in the washing step of HIC purifications.

It is respectfully submitted that the claims be allowed and the case passed to issue.

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Respectfully submitted,



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